

## WHAT IS CLAIMED IS:

1. A rotary element (10) of a printing press (16), having an encoder (18) for generating a first periodic signal in response to rotation of the rotary element (10), characterized in that the encoder (18) is linked to an evaluation unit (24), which has at least one synthesizer (60) for generating a second signal having a resolution ratio, a frequency ratio, and a phase relation to the first signal.
2. The rotary element (10) as recited in claim 1, characterized in that the evaluation unit (24) is provided with a control interface (68) for data exchange, so that the resolution ratio and/or the frequency ratio and/or the phase relation of the first and second signal is adjustable or selectable on the basis of data transmitted for the synthesizer (60).
3. The rotary element (10) as recited in claim 1 or 2, characterized in that the evaluation unit (24) is provided with at least one output interface (78), via which the second signal can be output for driving a clock-pulse-controlled device (34).
4. The rotary element (10) as recited in one of the preceding claims, characterized in that the resolution of the second signal is smaller than that of the first signal.
5. The rotary element (10) as recited in one of the preceding claims, characterized in that the evaluation unit (24) has at least one divider device (56, 58) connected upstream of the synthesizer (60) for reducing the resolution of the decoded first signal.
6. The rotary element (10) as recited in one of the preceding claims, characterized in that , in each instance, the first and the second signals are a sequence of signal pulses, a sequence of digital values, or a variable analog value.
7. The rotary element (10) as recited in one of the preceding claims,

characterized in that the rotary element (10) is a shaft, a cylinder, a roller, journal, or a gear wheel.

8. The rotary element (10) as recited in one of the preceding claims, characterized in that the evaluation unit (24) includes a plurality of synthesizers (60) for generating a plurality of signals, each having a resolution ratio, a frequency ratio, and a phase relation to the first signal, the resolution ratios and/or the frequency ratios and/or the phase relations of two signals of the plurality of signals being different.

9. A folding apparatus (30) of a rotary offset press (16), characterized by at least one rotary element (10) as recited in one of the preceding claims.

10. An offset press (16), characterized by at least one rotary element (10) as recited in one of preceding claims 1 through 8.